

## TECH TIP: CHRYSANTHEMUM CROWN BUDDING

**What is crown budding?** Crown budding is premature development of flower buds in response to cold (<50°F/<1°C) night temperatures at any point in the supply chain—stock plants, liners or a young, finished crop. These buds will flower much earlier than the target date leading to poor branching, uneven habit and decaying flowers at the point of sale.

The identifiable feature of crown buds is a change in leaf morphology from lobed leaves to non-lobed leaves, otherwise known as strap leaves (Fig. 1).



Fig. 1. Crown buds surrounded by non-lobed leaves.

### Strategies to Alleviate Crown Budding

**Nutrition:** Chrysanthemums are heavy feeders and respond to fertilizer adjustments. Use a formulation with higher ammonium nitrate (20-10-20) at 300 ppm to encourage growth past induced crown buds. In research studies, this method produced the largest and most-uniform crop that was still on its flowering target (Fig. 2B) compared to lower fertilizer rates (Fig. 2A).

Reduce feed to 150 to 250 ppm and occasionally use a more nitrate-based feed like 15-0-15 when normal bud development starts or when crown buds are covered, and the desired size is close to being achieved.

**Florel foliar spray:** Florel breaks down into ethylene, which induces branching (and in some cases) bud abscission. Enhanced branching will cover induced crown buds. **NOTE: Growers should use caution as a Florel can delay floral initiation and flower timing (Fig. 2C) if used after mid-July.**

Apply a foliar spray of 300 to 500 ppm one day prior to or the day following night temperatures below 50 °F (10°C). *Read and follow the label instructions.*

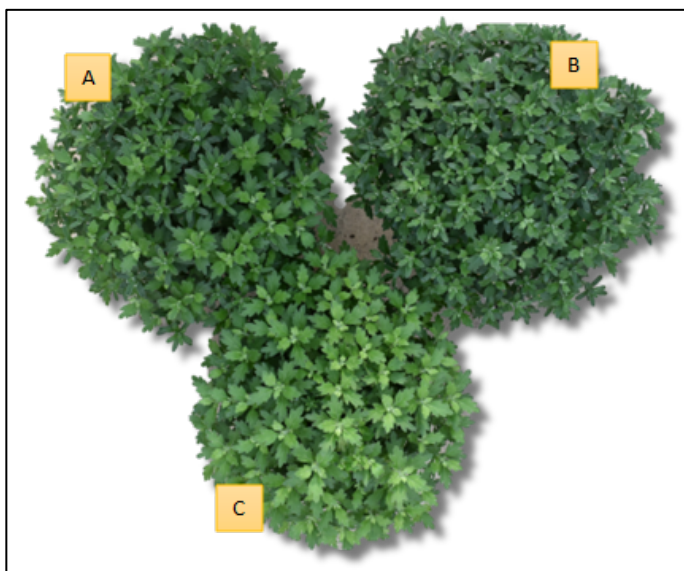


Fig. 2A-C. 'Morgana Pink' chrysanthemum grown using 200 ppm 14-4-14 (A), 300 ppm 14-4-14 (B), and 200 ppm 14-4-14 with a one-time 500 ppm foliar spray of Florel following 4 nights of 50 °F (10 °C).